Water Quality Data Guide for Public Submittal

Michigan Department of Environment, Great Lakes, and Energy, Water Resources Division

Although any relevant water quality data may be submitted to the EGLE Water Resources Division for consideration in the 2020 303(d), 305(b) and 314 (Integrated Report) assessment process, data that meet these minimum target durations and sample sizes, in combination with information on sampling and analytical methodology, and quality assurance/quality control (e.g. a Quality Assurance Project Plan or workplan) will be most useful. Data sets less rigorous than stated below may be used to screen water bodies for the need for future monitoring, as resources allow. This list is based on previously submitted data and is not meant to be exhaustive, those with data not described are encouraged to submit them for consideration.

Parameter		Target Sample size	Time frame	Comments
Dissolved oxygen (DO)	Conventional/Other	continuous	≥2 week	
Dissolved oxygen saturation		- -	- -	[1]
pH		continuous	≥2 week	
Temperature		continuous	≥2 week	
Total dissolved solids		weekly	≥1 month	Only relevant in water bodies potentially impacted by point-source discharges containing TDS.
Total suspended solids		- -	- -	[1]
Turbidity		- -	- -	[1]
Specific conductance		- -	- -	[1]
Chloride		weekly	≥1 month	Only relevant in areas designated as public water supplies and Great Lakes and connecting waters (ie., Keweenaw waterway, St. Mary's River, St. Clair River, Lake St. Clair, Detroit River).
Sulfate		- -	- -	[1]
BOD, Sediment Load		- -	- -	[1]
Ammonia, unionized		multiple samples	≥1 week	It is most helpful to have temperature, pH, total ammonia, and hardness data so that Unionized Ammonia (for which MI has a water quality criteria) may be calculated.
Escherichia coli	Bacteria	≥5 samples (each being a geomean of 3 samples)	1 year	
Total Coliform				[1]
Phosphorus, total	Nutrients			[1] Because Michigan has narrative water quality criteria for nutrients (except for nitrates in drinking water source areas), samples taken during the summer growing season are useful in conjunction with observations of nutrient expression (e.g. macrophyte surveys, secchi & chlorophyll-a (in lakes, see below), algae bloom observations, etc.). Nutient data alone are not typically useful for making water body assessments.
Phosphate				
Orthophosphorus				
Nitrogen, total				
Total Kjeldahl Nitrogen				
Nitrate/Nitrite		≥4 results	1 year	
Metals (e.g. mercury, copper, lead, zinc)	Toxics	≥4 results	1 year	It is most helpful to have corresponding hardness data so that criteria may be calculated for metals with hardness-dependent toxicity (e.g. zinc, copper, lead, cadmium, chromium).
Other (e.g. volatile organics, pesticides, PCBs, PFCs)				It should be noted that numeric water quality criteria have not been developed for every possible toxic contaminant.
Macroinvertebrate/Fish Assemblage	Other	≥1 result	1 year	
Velocity/Discharge		- -	- -	[1]
Secchi Disk		- -	- -	[1] In lakes, ideally taken during late summer in conjuction with Chlorophyll-a and total phophorus data.
Chlorophyll-a		- -	- -	[1] In lakes, ideally taken during late summer in conjuction with secchi and total phophorus data.

Notes:

[1] Michigan does not have numeric water quality criteria for this parameter, although some data may be useful in context with other information on assessing their impact to state designated uses.